

Having described the invention, I claim:

1. A vehicle occupant protection apparatus comprising:

an inflatable vehicle occupant protection device inflatable from a deflated condition to an inflated condition;

a vent opening for directing flow of inflation fluid away from said protection device;

a vent member movable relative to said vent opening between an open condition enabling flow of inflation fluid away from said protection device through said vent opening and a closed condition at least partially blocking flow of inflation fluid away from said protection device through said vent opening;

a member associated with said protection device and said vent member, said member being operative to move said vent member from the open condition to the closed condition in response to deployment of said protection device;

latching means having a latched condition for maintaining said vent member in the closed condition, said latching means also having an unlatched condition for preventing said vent member from remaining in the closed condition; and

control means operative to actuate said latching means selectively to the latched condition and the unlatched condition based on at least one sensed occupant condition.

2. The vehicle occupant protection apparatus recited in claim 1, wherein said vent opening comprises an opening in a support member for said protection device.

3. The vehicle occupant protection apparatus recited in claim 2, wherein said support member comprises a reaction plate.

4. The vehicle occupant protection apparatus recited in claim 1, wherein said vent member comprises a door supported for pivotal movement relative to said vent opening between the open and closed conditions.

5. The vehicle occupant protection apparatus recited in claim 1, wherein said member comprises a tether.

6. The vehicle occupant protection apparatus recited in claim 5, wherein said tether has a first

portion connected with said protection device and a second portion connected with said vent member, said protection device while inflating pulling on and tensioning said tether, said tether when tensioned pulling said vent member from said open condition to said closed condition.

7. The vehicle occupant protection apparatus recited in claim 6, wherein said tether pulls said vent member from the open condition to the closed condition only in response to movement of said protection device away from said vent member a distance in excess of a predetermined distance.

8. The vehicle occupant protection apparatus recited in claim 6, wherein said tether has slack when said protection device is in the deflated condition, said slack being removed from said tether when said protection device moves a predetermined distance away from said vent member, said tether pulling said vent member from the open condition to the closed condition in response to movement of said protection device beyond said predetermined distance.

9. The vehicle occupant protection apparatus recited in claim 5, further comprising a velocity mechanism connecting said tether with said vent member, said velocity mechanism being operable to release said tether for movement relative to said vent member when said tether is pulled at a velocity below a predetermined velocity, said velocity mechanism being further operable to lock said tether against movement relative to said vent member when said tether is pulled at a velocity at or above said predetermined velocity.

10. The vehicle occupant protection apparatus recited in claim 9, wherein said vent member is maintained in the open condition when said velocity mechanism releases said tether for movement relative to said vent member.

11. The vehicle occupant protection apparatus recited in claim 9, wherein said tether pulls said vent member to the closed condition when said velocity mechanism locks said tether against movement relative to said vent member.

12. The vehicle occupant protection apparatus recited in claim 9, further comprising releasable connection means for connecting said tether to said protection device, said releasable connection means releasing said tether from said protection device when a predetermined amount of tension is placed on said tether.

13. The vehicle occupant protection apparatus recited in claim 1, further comprising buckle sensing means for sensing a buckled condition and an unbuckled condition of a seat belt of the vehicle, said buckle sensing means being operatively connected with said control means, said control means being operative to actuate said latching means to the latched condition upon sensing an unbuckled condition of said seat belt, said control means being further operative to actuate said latching means to the unlatched condition upon sensing a buckled condition of said seat belt.

14. The vehicle occupant protection apparatus recited in claim 1, further comprising occupant position sensing means for sensing the position of the vehicle occupant, said occupant position sensing means being operatively connected with said control means, said

control means being operative to actuate said latching means to the latched condition upon sensing via the occupant position sensing means that the vehicle occupant is positioned in the normal seated position in the vehicle, said control means being further operative to actuate said latching means to the unlatched condition upon sensing via the occupant position sensing means that the occupant is positioned away from the normal seated position in the vehicle.

15. The vehicle occupant protection apparatus recited in claim 1, further comprising seat position sensing means for sensing the position of a vehicle seat, said seat position sensing means being operatively connected with said control means, said control means being operative to actuate said latching means to one of the latched and unlatched conditions depending on the sensed position of the vehicle seat.

16. The vehicle occupant protection apparatus recited in claim 1, further comprising seat weight sensing means for sensing the weight of an object in a vehicle seat, said seat weight sensing means being operatively connected with said control means, said control means

being operative to actuate said latching means to one of the latched and unlatched conditions depending on the sensed weight in the vehicle seat.

17. The vehicle occupant protection apparatus recited in claim 1, wherein said control means is operative to actuate the latch mechanism to the unlatched condition when said at least one sensed occupant condition is indicative of an occupant positioned away from a normal seated position in the vehicle.

18. The vehicle occupant protection apparatus recited in claim 1, wherein said control means is operative to maintain said latching means in the latched condition when said at least one sensed occupant condition is indicative of an occupant is in a normal seated position without being restrained by a vehicle seat belt.

19. The vehicle occupant protection apparatus recited in claim 1, wherein said control means is operative to maintain said latching means in the latched condition long enough to inflate said protection device fully and then actuate said latching means to the unlatched condition to release said vent member to vent

inflation fluid from said protection device when said at least one sensed occupant condition is indicative of an occupant in a normal seated position and restrained by a vehicle seat belt.

20. A vehicle occupant protection apparatus comprising:

an inflatable vehicle occupant protection device inflatable to deploy from a deflated condition to an inflated condition;

a vent opening for enabling flow of inflation fluid away from said protection device;

a vent member movable relative to said vent opening between an open condition enabling flow of inflation fluid away from said protection device through said vent opening and a closed condition at least partially blocking flow of inflation fluid away from said protection device through said vent opening;

a tether connected to said protection device, said protection device during inflation and deployment pulling on said tether; and

a velocity mechanism for connecting said tether with said vent member, said velocity mechanism being operable to release said tether for movement relative to

said vent member when said tether is pulled at a velocity below a predetermined velocity, said velocity mechanism being further operable to lock said tether against movement relative to said vent member when said tether is pulled at a velocity at or above said predetermined velocity, said tether being operative to move said vent member from the open condition to the closed condition when said protection device pulls on said tether and said velocity mechanism locks said tether.

21. The vehicle occupant protection apparatus recited in claim 20, further comprising:

actuatable latching means having a latched condition operable to maintain said vent member in the closed condition once said vent member is moved to the closed condition;

control means operative to actuate said latching means selectively between the latched condition and an unlatched condition based on at least one sensed occupant condition, said latching means when in the unlatched condition releasing said vent member to move to the open condition.